

... The very power, usefulness, versatility, and applicability of genetic engineering make the issue of hazard especially relevant.

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Forum

Dioxin: Dangerous as Expected

"There is adequate evidence from studies in human populations as well as in laboratory animals and from ancillary experimental data to support the inference that humans are likely to respond with a plethora of effects from exposure to dioxin and related compounds." So states the summary of the 2000-page report of the recently released EPA reassessment of dioxin, which concluded that dioxin and related compounds could possibly present a risk of cancer, as well as potential for adverse impacts on human metabolism, immune function, and fetal development at very low levels.

Dioxin is produced as an unwanted by-product of heating or burning chlorine in the presence of organic materials. Dioxin is released into the air and water from manufacturing processes. The most widely known examples of such processes include incineration of hazardous waste and hospital waste and bleaching of paper. It is estimated that 90% of a human's body burden of dioxin comes from ingestion of contaminated food.

Review of studies included in the reassessment determined that subtle changes in liver enzyme activity, levels of reproductive hormones in males, reduced glucose tolerance, and cellular changes related to immune function suggest that body burden levels up to 10 times the level found in the average person may be sufficient to produce noncancer effects. Concern was raised that even lower levels might cause these effects in sensitive individuals.

The EPA risk characterization states that "We need to continue to monitor trends in human body burden for dioxin and related compounds," and raises the importance of considering effects in addition to cancer when formulating dioxin exposure regulations. Lynn Goldman, assistant EPA administrator for prevention, pesticides, and toxic substances, stressed, however, that the reassessment was based largely on animal studies and that it is difficult to draw conclusions for humans.

EPA will be accepting public comment

on the findings of the report, which are expected to be contested by many in the industrial and scientific communities. After the period for public comment, the reassessment will be reviewed by the EPA Scientific Advisory Board, which consists largely of scientists outside of government, and by an interagency review committee.

George Lucier, author of two of the background papers used in the reevaluation, said, "EPA's reevaluation of dioxin's risks has been a very open process involving scores of expert scientists in the area of dioxin. There is increasing evidence that this compound is a potent and persistent environmental hormone with the capacity to alter cell function and normal growth patterns leading to neurological, developmental, and reproductive effects. However, we still don't know if current background levels are capable of causing these effects."

Goldman Environmental Prize

A Cree Indian fighting a Canadian dam project and an Egyptian woman leading a wide-scale recycling effort are among this year's six recipients of the Goldman Environmental Prize, the world's largest grassroots environmental prize program.

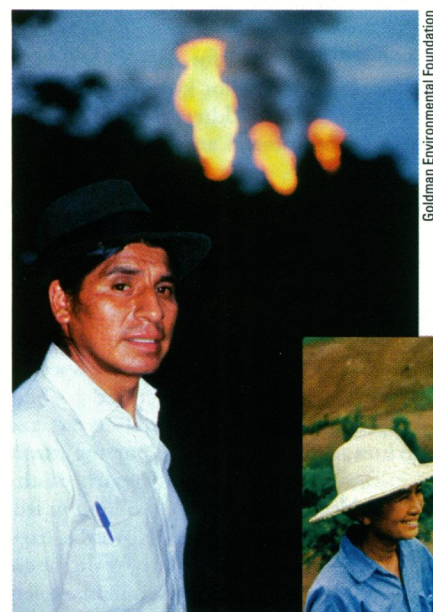
The Goldman Prize, awarded for "sustained and important efforts to preserve or enhance the environment," includes a \$60,000 award to allow the recipients to pursue their projects without financial constraints. The prize jury includes members of the Goldman Environmental Foundation and individuals such as Joan Martin-Brown, the founder of WorldWIDE, and Alvaro Umaña, the former environmental minister of Costa Rica. The winners, one from each of the six inhabited continents, were nominated by 19 international environmental organizations including the Sierra Club, National Wildlife Federation, National Geographic Society, Nature Conservancy, Environmental Defense Fund, Friends of the Earth, and a confidential panel of environmental experts from more than 30 nations.

Africa: Laila Kamel. As volunteer director of the Association for the Protection of the Environment (APE), Laila Kamel

has dedicated her time to improving the lives of Cairo's garbage collector population. The unskilled and uneducated garbage collectors live outside the city among mountains of garbage and make their livelihood out of collecting household waste. APE has pioneered several recycling projects in the community with the goal of turning "trash into cash." For example, high-grade fertilizer is produced from organic waste at a neighborhood composting plant and is sold to farmers and gardeners. Other projects include melting and reworking metals and manufacturing recycled paper products. Kamel developed a Rug Weaving Center where young women "turn rags into riches." The women are reviving an ancient Egyptian craft by using discarded cotton remnants to weave rugs on a hand-loom. The colorful rugs are sold at craft fairs, and the earnings are divided among the weavers. While they learn to weave, the young women also learn basic math and literacy skills. At least 100 women participate in Kamel's "learning and earning" project each year.

Asia: Tuenjai Deetes. For nearly 20 years, Tuenjai Deetes has lived and worked with Thailand's disenfranchised hill tribe people. These groups have fled ethnic wars and hardships in Burma and Laos for decades to settle in the northern border region, a mountainous area plagued by drug trafficking. Because the hill tribes have shifted agriculture on the steep slopes, they are partially responsible for massive deforestation and soil erosion that have devastated the nation's most important watersheds. Tuenjai co-founded the Hill Area Development Foundation to increase the self-sufficiency of these communities, while also protecting natural resources and honoring the tribal cultures. Tuenjai has helped introduce reforestation projects and sustainable agricultural practices for steep slopes to help protect the fragile area.

Island Nations: Andrew Simmons. In response to extensive exploitation of one of the world's oldest forest reserves located in his community, Andrew Simmons has established a successful environmental movement in St. Vincent and the Grenadines, an eastern Caribbean island nation.



Goldman Environmental Foundation



Taking back the land. Luis Macas, leader of Ecuador's national Indian organization, is leading the fight for control of the Amazon by indigenous peoples.

Into the hills. Tuenjai Deetes works to protect Thailand's natural resources while honoring tribal culture.

organization that has succeeded in putting the issue of multilateral and bilateral aid reform on the national agenda.

North America: Grand Chief Matthew Coon Come. The vast subarctic region of Northern Quebec where the Cree Indians have led a subsistence lifestyle for 5000 years is being threatened by efforts to build a major hydroelectric development project near the James Bay. The first part of the dam project has been built and has caused many environmental and social problems. If the state-owned utility, Hydro Quebec, is completed, it would block 9 major rivers with more than 30 dams and 600 dikes and would damage a watershed area the size of France and flood an area larger than New Hampshire. Coon Come has led the Cree in their opposition to the dam by establishing a local, national, and international coalition to oppose James Bay II. As a result of Coon Come's work, New York has canceled major

contracts to purchase electricity from Hydro Quebec, and the utility has been forced to conduct an environmental impact assessment, which the Cree are reviewing.

South/Central America: Luis Macas. In a struggle for indigenous rights in Ecuador, where indigenous people represent 45% of the population, Luis Macas has helped to make major advances. Macas, a Quichua Indian from the Andean highlands, helped organize a peaceful uprising on 28 May 1990, a synchronized event in which more than one million indigenous people stopped working. This opened the door to discussions between indigenous groups and the government. In May 1992, the president of Ecuador returned three million acres in the Amazon's Oriente region to 148 indigenous communities, the single largest land return in the region. But these communities have recently been under pressure from multinational companies that have been drilling in the Amazon for 20 years. Macas, now the leader of Ecuador's national Indian organization, CONAIE, is campaigning to get oil companies to provide protection for the Oriente.

World Population Conference

With the world population growing at a faster rate than ever before, concern over

environmental degradation and the diminished quality of life around the globe is increasing. These and other concerns have prompted the establishment of the International Conference on Population and Development (ICPD), to be held by the United Nations in Cairo, Egypt, from September 5–13 of this year. The conference will set population policy guidelines for the next decade that recognize the interrelation of the population, the environment, and human well-being. The aim, according to the U.N., is to find the right balance between fulfilling human rights, needs, and aspirations, on the one hand, and fostering sustainable development and preserving environmental conditions and natural resources, on the other.

The organizers of the conference are emphasizing the critical role that population policies must play in the struggle to halt environmental deterioration, alleviate poverty, improve health and education, and empower women to participate fully in their societies. This is the third in a series of once-every-decade world population conferences sponsored by the U.N., and the first to explicitly link population with development. The first such conference, held in 1974 in Bucharest, produced the World Population Plan of Action. The second, held in 1984 in Mexico City, produced recommendations for further implementation of the action plan.

Some of the issues to be discussed at the third conference were addressed at the 1992 Earth Summit in Rio de Janeiro, such as sustainable development, environment, and the status of women. But population was virtually ignored because there were conflicts among participants over how to address it. The Cairo conference has the potential to be more productive. Vice President Gore has already indicated that he will attend. President Clinton has requested a \$100 million increase in international population assistance for the coming year and called for a restructuring of foreign aid programs to promote sustainable development.

Although the reluctance of the United States that was evident at the Earth Summit may no longer be an obstacle, other controversies remain, including one major issue to be addressed, the population–environment link. At the Earth Summit, a rift emerged between developed and developing countries over accepting responsibility for environmental problems. This may resurface in conflict between rapid population growth in developing countries versus high consumption and waste in developed countries. American officials have acknowledged the impact of high U.S. consumption on world resources, but the delegations of developing countries are not con-

In 1978, he founded the JEMS Progressive Community Organization, which identifies solutions to conservation and development needs in the area through festivals, plays, and music. The members of the community, especially the youth, have been very responsive, participating in clean-up campaigns and leadership training. JEMS has established a day-care center where conservation is taught to children, and an adult literacy project that focuses on environmental issues and provides skills training. The community is committed to ensuring that only environmentally sound development projects be located in the area.

Europe: Ildiko "Heffa" Schücking. Although lobbying the government is unusual in Germany, Ildiko "Heffa" Schücking has been highly effective in influencing government policy on environmental matters. In the 1988 "Rainforest Memorandum," she exposed the link between consumption in northern industrialized countries and the destruction of southern tropical forests, documented the Federal Republic's responsibility for rainforest destruction, and called for an end to German funding of destructive activities in primary rainforests. She has also organized over 1200 local councils throughout Germany to abandon the use of tropical timber in municipal building projects. In 1992 Schücking founded Urgewald, an